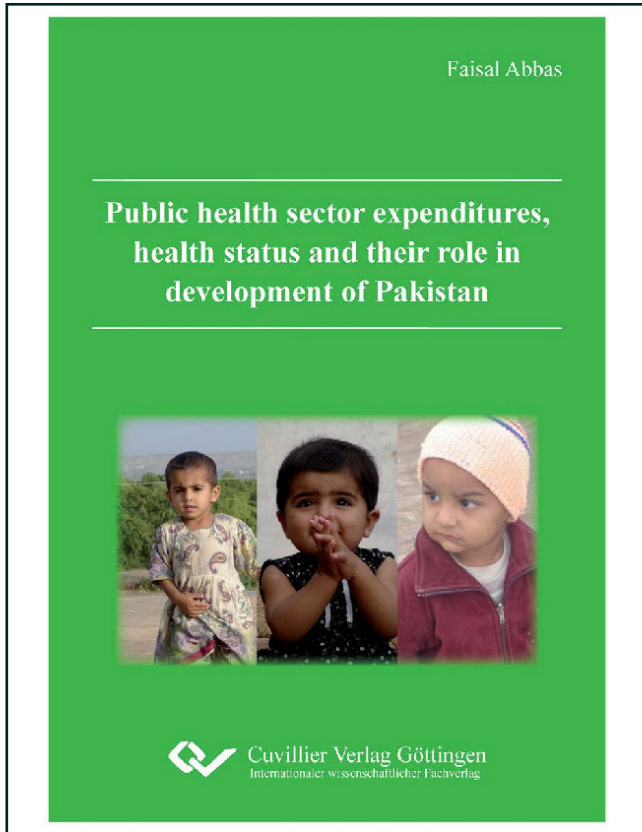




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Public health sector expenditures, health status and their role in development of Pakistan



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Chapter 1 General Introduction

1.1 Background

Since Robert Solow (1956) investment especially for physical capital formation, was regarded as basis for economic growth which trickle down by its own over time. New growth theories, on the contrary, emphasize human potential to achieve sustainable growth by investing in human capital formation. Health and education is regarded as basis to invest in people for their betterment and to make economic growth more broad based and sustainable.

The failure of convergence between developed and developing countries necessitates the emergence of endogenous growth theories pioneered by Romer (1986, 1990) and Lucas (1988). In their model, the positive externalities expected from investing in people prevent decreasing marginal capital productivity. Hence, this theory created an increasing interest of researchers and policy makers in investigating the role of human capital formation (especially health) for the growth process. Emphasis for achieving better results of investing in human lies on the ground of attaining basic services like health, education and nutrition for ensuring better quality of life to majority (Behrman and Schneider, 1993). Cross country evidence suggested that growth of income and provision of basic services (health, education and water and sanitation) can help reduce poverty more than expanding the industrial output (Bourguignon and Morrison, 1998).

Analyzing social sector spending has attained a prominent place in the development literature. Especially, macroeconomic aspects of social spending and its impact on human and economic development are investigated empirically. Developing human capital through better educational opportunities and improving the health status will boost the productive potential not only of the individual but also the society through positive externalities. The example of East Asian countries in this context is quite helpful as these countries were able to lower the disparities in human capital formation and hence achieve pro poor growth (Deininger and Squire, 1998 and Klasen, 2002). Investing in people is essential to achieve development goals like economic growth, structural change and poverty reduction.

Human development has remained a corner stone in development policy debate across the globe, while approaches to achieve this goal remained inconclusive. World Bank and related research perched around the notion that growth in the economy entails to build human capital while UNDP standpoint explains that human welfare is central to any development process. In former approach development is

seen as a goal while latter focused on human welfare as an end of development process. Development policy followed by United Nations Development Program (UNDP, 1990) has emphasized more toward investing in human capital formation as opposed to that of World Bank.

Health (like education) is among the basic capabilities that gives freedom to human life (Sen, 1998 and 1999). Health is claimed to be a basic human right, an important aspect of life and is widely recognized that improved health not only lowers mortality, morbidity and level of fertility, but also contributes to increased productivity (Bloom and Canning, 2001).

The income-health, two way relationship, is described in empirical and theoretical literature. While which way to focus, for economic growth and hence sustainable development or vice versa is a debatable issue. One strand of literature agrees on investing in economy to produce more income which enables people to purchase things of value for them and hence achieve better living (Filmer and Pritchett, 1997 and Ravallion, 1997). While other relates better health status with increasing income by its effect on productivity and better functioning and reduced disease burden (see for example; Hanmer et.al, 2003 and Ramirez et.al, 2000). Nevertheless, public health expenditures are determined not only by income but also by host of other social, economic, demographic, environmental, cultural and political factors.

Better health can be regarded as a major determinant of welfare level and therefore, affects poverty directly. The strong association between health and economic indicators suggests that health is also a determinant of economic welfare of the nations. In recent years impact of human capital formation (especially health status) is realized to be an important predictor of economic growth not only in individual countries but across countries and over time (Alderman, et al, 2003; Bhargava, 2001; Webber, 2002 and Zon and Muysken, 2003). Therefore, health and its likely impact on individual's wellbeing and on economic development received immense importance at various levels (Frank and Mustard, 1994).

Although, health is associated with development but what is not yet confirmed is the path of causation as empirical evidence argues both ways (see for example; Ramirez, Ranis and Stewart, 1997 and Gallup, Sachs and Mellinger, 1998). It is doubtless to say human welfare and wellbeing is an end in itself, while understanding in a refined way, this complex relation between health and economic growth is an important policy issue for priority settings.

Evidence from post World War-II literature suggested an unprecedented increase in life expectancy and reduction in infant and child mortality. Although, the distribution is skewed across region and within

the country rural and urban areas have different outcomes. While this process of decline in mortality and increasing life expectancy had different path to reach at some better level in today's world. It took two to three centuries in Europe to reduce its infant and child mortality and increase life expectancy while in South-East Asia it took only few decades which is described by a study of Asian Development Bank (ADB, 1997) as "demographic gift". This demographic change has contributed 0.5 to 1.3 percent in annual growth since mid 1960 to early 1990 or 15 to 40 percent of the region's overall economic improvement. The effect of health and demographic variables are also analyzed for Africa, by Bloom and Sachs (1998) and concluded that half of the difference between growth of Africa and rest of the world can be explained by demographic factors and health improvements over the same period. Reduced mortality by 2 per 1000 live births accounts for 1 percent increase in growth rate in subsequent quarter century in 25 African countries. Because of the fact that mortality have direct bearing on fertility which directly affects growth process, as fertility reduces by 2 child growth increases by 1 percent. Cyclical nature of health development relationship makes it important to take care of both sides (Hamoudi and Sachs, 1999).

Income is explaining much of the difference between health of the poor at regional and/or at country level as well as across the countries. Nevertheless, factors other than income also have substantial role to play in determining decent living standards and achieving better health status. Much of the literature focused on growth determinants focus on income that is 'mean' to achieve an 'end', while few of the studies (Sen, 1985 and 1987) used poverty, health status and worst living conditions as deprivation of ends which is called capabilities and functioning of utmost importance. Survival is basic capability worthy of analyzing in its own right (Sen, 1995 and 1998). A determinant of economic welfare, as determined by GDP per capita is distinct from that of economic welfare as measured by infant mortality. While former measure explaining material welfare and has an indirect affect on human wellbeing and latter has a direct bearing on human welfare level (Sen, 1999 and Younger, 2001).

Recently, country level studies to empirically estimate the effect of health on economic growth are gaining importance. Dominating studies in this line of inquiry are cross country and panel data studies. These studies has a geographical focus on developed world, and/ or mix of developing and developed world, some of them focusing on least developing countries but virtually non is using single country data from developing country hence lacking evidence from the developing world.

Three issues are arising from the debate on the income and health relationship at macro-economic level. First, is that the exploration of the possible contribution of income and non income factors that

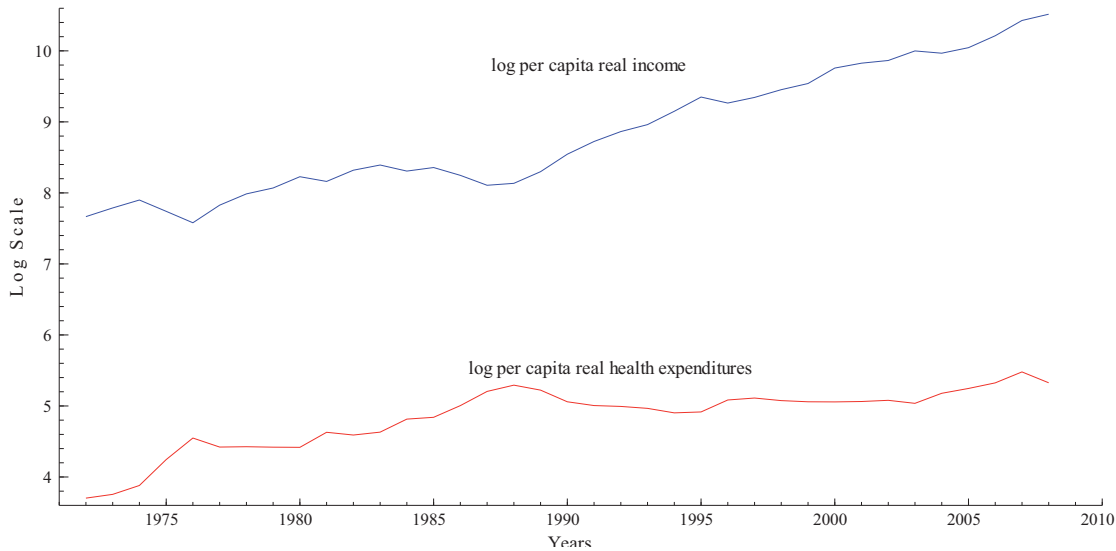
affect the public health expenditures. Secondly, affect of public health expenditures on aggregate population health by considering variables like; life expectancy and mortality. Finally, the role of different health related variables like; resource allocation for health sector, nutrition availability per capita, and health status (e.g., life expectancy, fertility, and mortality) on economic growth of the country. This dissertation is exploring the above issue and an addition to the ongoing debate of health-development nexus in a developing country context using annual time series data from Pakistan.

Social sector development, especially health, in Pakistan over the years remains a core policy agenda while still the health indicators are far from satisfactory. High total fertility rate at country level remained a challenge for every government with addition to increasing poverty and unemployment, high inflation and low level of health status. The continuous rise in fertility adds to increasing population growth which remained well above 2 percent in the decade of 1990 (Hussain et. al, 2003). Comparing Pakistan's social sector indicators with its South Asian neighbors gives very bleak picture of human development in the country. For instance, on average basis total fertility rate (children born by a women of age 15-49) was five in year 2002 which is very high compare to Sri Lanka having fertility rates of two even India (the most populous country after china) has three while Nepal has four (ADB, 2005). Comparing to Sri Lanka and India's population growth rate of about one percent annually, Pakistan is growing with a population growth rate of almost two percent (ADB, 2005). Pakistan has highest infant mortality rates of 74 per thousand live births comparing to 13 in Sri Lanka and 63 and 46 respectively for India and Bangladesh. Life expectancy in Sri Lanka is 74 years compared to Pakistan's 64 years, while in India and Bangladesh are not significantly different from that of Pakistan at 63 and 62 years respectively (ADB, 2005). Pakistan fall well behind in terms of developing its human resources, on human development index Pakistan's rank is 135th out of 177 countries even far behind then that of neighboring India at 127th and Sri Lanka at 93rd (UNDP, 2005). In terms of allocation of monetary resources to health sector and access to far flung (remote) areas as well as coverage in terms of hospitals, hospital beds, skilled paramedic staff and doctors is lacking far behind (Khan, 2003a). The resource allocation (public spending) in last fifteen years squeezed in social sector.

Pakistan's retrospective scenario is obvious from comparison with countries of its region, social disparity is deepened and the growth over time did not produce the results for the betterment of the people that is poverty and inequality increased (Easterly, 2001 and World Bank, 2002). Without social sector development high growth rate can't be helpful in reducing the gaps among social strata as well

as uplifting living standards of the people. As described by the Pakistan National Human Development Report (2002) that improving the conditions of health care, hygiene and prevention trims down the frequency of disease occurrence, reduces the cost for treatment and hence not only help in escalating the productivity but the income of the poor thus prevent the inhuman conditions.

Figure 1.1: Trend analysis of per capita income and per capita health expenditures



Low government health expenditures as percentage of GDP, growth oriented policies (industrial bias), lack of governance, mismanagement and lack of utilization of allocated resources during plan period are among the various factors adding to deteriorating health facilities and infrastructure in Pakistan. Two types of major issues faced by public health indicators; first is the higher average health inequality and second is inequality in provision of health care services.

The average indicators of health both on input and output (supply or demand side factors) are not performing well, due to reasons explained above and aggregate health status is improving but gradually comparing to increase in income level. If we compare the regions in Pakistan the inequality in terms of access to health services by income groups, gender and at regional level (rural and urban level) pose a further threat to the existing public health situation.

1.2 Objectives

Keeping in view the important role that health can play in improving living conditions of the population this dissertation aims at empirically estimating the role of health variables in economic development of Pakistan. Specifically, estimating the role of macroeconomic and policy relevant factors affecting public health spending and health status improvements in Pakistan over time. Beside

this, another objective of this dissertation is to provide a brief and comprehensive overview of the public health sector in Pakistan. Also, an attempt has been made to see the likely impact of health related variables like health status and per capita nutrition availability on economic development of Pakistan. The dissertation beside an overall objective of looking at health development nexus is focusing on the following;

A). the role of various income and non income variables that affect public health expenditures also the role that public health expenditure and other related factors can play in improving health status of the population. Long run and short run relationship of income and non income variables with health expenditures in Pakistan (an economy characterized by low public health spending) is explored using health demand function approach.

B). it is an empirically established fact that health spending has an impact on health status, therefore using time series data it is empirically tested whether health output (e.g., life expectancy or IMR) is income sensitive and/or related to non economic factors or not. Also, the direction of relationship is estimated using Granger bivariate causality tests.

C). to quantify the impact of nutrition availability per capita on population adjusted income in Pakistan and comparing it with other health related factors like; infant mortality rate , public health care expenditures and total fertility rate.

1.3 Organization of the thesis

The dissertation includes, beside this first introductory chapter, seven other chapters. The outline of these chapters and their organization is described as follows;

First chapter briefly introduces the subject of this dissertation including overall and specific objectives. Second chapter presents an overview of the existing literature on; i) macroeconomic factors that affect public health expenditures ii) social, economic, political and demographic variables that impact aggregate health status iii) nutrition and its possible relationship with development (per capita income). The second chapter basically aims at presenting an overview of the state of the art and the gaps that exist in the literature. Also, this chapter identifies some questions and hypotheses to test, keeping in view the objectives of the dissertation. Finally, this chapter describes the contributions that are made by this dissertation. Third chapter briefly explains the health sector of Pakistan. It describes how health care services provision evolved in Pakistan. Also, it explains changes in the health care expenditures over time, health status of the population and accompanying health policy goals. This chapter further evaluates the health policies presented in different regimes. Lastly, the chapter elaborates and looks

into the health personnel and their role in health services provision. Fourth chapter explains the theoretical framework which forms the basis of this dissertation. Also, it explains the methodology used in this dissertation to dig out the various objectives.

Fifth chapter tries to answer the following question; what macroeconomic factors determine the expenditures on public health? Applying demand function approach this chapter empirically estimates the factors affecting public resource allocation to health care services in time series framework to get a better know how and policy guideline for resource allocation. This chapter aims at looking the determinants of public health sector expenditures in Pakistan, broadly speaking.

Chapter six tries to empirically estimate the social, demographic and economic factors that affect health status in Pakistan. The main objective of this chapter is to see whether increased spending in health sector helps in reducing (IMR) and also bringing some betterment in (female) life expectancy using production function approach. Health status is measured as Infant mortality rate (IMR) and female life expectancy at birth. This chapter also empirically estimates the causal link between health status, health care spending and other policy relevant variables. The result will help in formulating some policy guidelines for achieving better health status.

Chapter seven investigates how per capita availability of calories affects income at national level? This chapter models the impact of per capita calorie availability and other social and macroeconomic factors on GDP per capita, and tries to find out the long run relationship using growth theoretical framework. Granger bivariate causality between the variables of interest and the GDP per capita is also estimated. Final chapter summarize the main results of the dissertation and concludes with some policy guidelines and future areas of research.